

Product Evaluation

SHU116 | 0522

Engineering Services Program

The following product has been evaluated for compliance with the wind loads specified in the International Residential Code (IRC) and the International Building Code (IBC).

This product evaluation is not an endorsement of this product or a recommendation that this product be used. The Texas Department of Insurance has not authorized the use of any information contained in the product evaluation for advertising, or other commercial or promotional purpose.

This product evaluation is intended for use by those individuals who are following the design wind load criteria in Chapter 3 of the IRC and Section 1609 of the IBC. The design loads determined for the building or structure shall not exceed the design load rating specified for the products shown in the limitations section of this product evaluation. This product evaluation does not relieve a Texas licensed engineer of his responsibilities as outlined in the Texas Insurance Code, the Texas Administrative Code, and the Texas Engineering Practice Act.

For more information, contact TDI Engineering Services Program at (800) 248-6032.

Evaluation ID: SHU-116

Effective Date: May 1, 2022

Re-evaluation Date: April 2025

Product Name: TPS Clearguard® Polycarbonate Storm Panels

Manufacturer: Transparent Protection Systems, Inc.
633 Dunksferry Road
Bensalem, PA 19020
(215) 638-0800

General Description:

TPS Clearguard® Polycarbonate Storm Panels are corrugated 0.100" thick (± 0.010 "). The polycarbonate panels are extruded from 100 percent synthetic thermoplastic polymer resin (UV stabilized). The typical synthetic thermoplastic polymer tensile strength is $F_y=8.908$ ksi, the Flexural Strength is $F_{by}=12.90$ ksi, and the Flexural Modulus is 328.7 ksi.

The panels are offered in full panel profiles, half panel profiles, "Clearmax" double wide panel profiles, and alternative full panel profiles. The depth of the panels is 2".

All aluminum extrusions are 6063-T6 aluminum alloy unless otherwise noted on the drawings.

These panels may be mounted vertically or horizontally as applicable. The span direction is perpendicular to the line of anchorage.

Product Identification: The storm panels have a permanent label that identifies the manufacturer (Transparent Protection Systems, Inc); the name of the product (Clearguard Polycarbonate Storm Panels); the missile Level (Missile Level D); the test standards (ASTM E 330, ASTM E 1886, and ASTM E 1996); and the drawing No. 20-31355.

Compliance: The shutters comply with ASTM E 330-14, ASTM E 1886-13a, and ASTM E 1996-14a.

Design Drawings:

"TPS Clearguard Polycarbonate Storm Panels;" Transparent Protection Systems, Inc.; Drawing No. 20-31355; Sheets 1–6 of 6; dated August 17, 2004; revised September 4, 2020, signed, sealed, and dated January 19, 2022 by Frank L. Bennardo, P.E. The stated drawings will be referred to as approved drawings in this report.

Maximum Allowable Design Wind Pressure: ± 120 psf (3'-10" span for installations not including the "H" header), ± 104 psf (4'-0" span using the "H" header)

Maximum Panel Span: 12'-0" (38 psf for installations not including the "H" header), 8'-7" (17.3 psf for mounting with "H" header)

Maximum Width: The width is unlimited.

Wall Construction: The storm panels may be mounted to the following types of wall framing:

- Concrete (minimum compressive strength 3,000 psi)
- Hollow block concrete masonry units (CMU), C-90, Grade N, Type 1 (or greater)
- Wood (minimum Spruce-Pine-Fire dimension lumber or Southern Yellow Pine) as specified in anchor tables

Minimum Separation from Glass: A minimum glass separation is not required. The storm panels may not be installed on essential facilities as defined in the IBC.

Impact Resistance: This shutter assembly satisfies the Texas Department of Insurance's criteria for protection from windborne debris. The assembly passed Missile Level D as specified in ASTM E 1996-14a. The assembly may be installed at any height on the structure as long as the design pressure rating for the assembly is not exceeded. The storm panels may not be installed on essential facilities as defined in the IBC.

Installation:

General Installation Requirements: The storm panels must be installed in accordance with the manufacturer's installation instructions, the approved drawings, and this product evaluation report. Copies of the approved drawings must be available on the jobsite during inspection of the shutter assembly.

Anchorage: The storm panels must be anchored to the structure in accordance with the approved drawings. Anchorage of the storm panels to concrete, hollow block concrete masonry units (CMU), and wood wall framing must follow the mounting conditions and fastener options specified on the approved drawings and the wall construction requirements in this evaluation report.

Note: Keep the manufacturer's installation instructions and the approved drawings available on the job site during installation. Use corrosion resistant fasteners as specified in the IRC and the IBC.